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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

NGUYEN, KEVIN M

ART UNIT

PAPER NUMBER

2629

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 09/818,081	Applicant(s) GETTEMY ET AL.	
	Examiner Kevin M. Nguyen	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10, 12-16, 18-25, 28 and 29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 12-16, 18-25, 28 and 29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 September 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>3/8/04, 4/25/07, 8/20/07</u> . | 6) <input type="checkbox"/> Other: _____ |

Request for Continued Examination

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under Ex Parte Quayle, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on 8/20/2007 has been entered.

Information Disclosure Statement

The information disclosure statement filed 3/8/2004, 4/25/2007, and 8/20/2007 which have been placed in the application file, the information referred to therein has been considered as to the merits.

Specification

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because the abstract contains 242 words in length. Correction is required. See MPEP § 608.01(b).

Drawings

The drawings are objected to because the texts and the lines are too thick, too thin, too dark, too light, hand drawn, and hand written to view. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because figures 1-14 are unclear text and drawing. Applicant is advised to

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employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 25, 28 and 29 are rejected under 35 U.S.C. 102(e) as being anticipated by Yokota et al (US 6,181,313 hereinafter Yokota).
2. As to claim 25, a display unit comprising: a passive matrix of independently controllable pixels comprising a fixed dimension of rows and columns of discrete pixels, said passive matrix operable to generate an image in response to electronic signals driven from row and column drivers coupled to said passive matrix, said image representative of information stored in a frame buffer memory; and a border surrounding said passive matrix and comprising a plurality of pixels each of which is uniformly controlled between an on and an off state as applied to each pixel by a constant and common threshold signal, wherein said constant and common threshold signal is driven by constant and common voltages for said rows and said columns in said border

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(Yokota teaches a display unit 1 comprising a passive matrix of pixels n rows and m columns of discrete pixels, a common driver 16, a segment driver 14, a display data memory 7 (figure 1), the drive duty (duty ratio) selection register 34 controlling producing a display on the central 2 rows on the screen, the shifting operation is started from F/F9 and is ended at F/F24; the flip flops F/F1 to F/F9 and F/F25 to F/F32 are reset at all times, and are not shifted (see figure 9, column 9, lines 49-53) which are controlled between on and off state by a common threshold signal by subtracting the potential of the segment signal from the potential of the common signal, see figures 14K and 14L, column 14, lines 43-50).

As to claim 28, the display unit of claim 25 and further comprising: a contrast adjustment circuit for adjusting voltage levels supplied to said row and column drivers to adjust the contrast of said image of said passive matrix, and wherein said contrast adjustment circuit is also operable to adjust said common threshold signal to match the contrast of said pixel border to that of said passive matrix (Yokota teaches a contrast adjust circuit 39, figure 14A, col. 13, line 64 to col. 14, line 12).

As to claim 29, a display unit of claim 25, wherein said image has a white background and a black foreground and wherein said pixel border is driven to said on state to be white to match said background (Yokota discloses in figure 24).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-5, 13, 14, 15 and 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yokota et al (US 6,181,313 hereinafter Yokota) in view of Grupp (EP 0 394 814 A1).

4. As to **claim 1**, Yokota teaches a display unit 1 comprising a passive matrix of pixels n rows and m columns of discrete pixels, a common driver 16, a segment driver 14, a display data memory 7 (figure 1), the drive duty (duty ratio) selection register 34 controlling producing a display on the central 2 rows on the screen, the shifting operation is started from F/F9 and is ended at F/F24; the flip flops F/F1 to F/F9 and F/F25 to F/F32 are reset at all times, and are not shifted (see figure 9, column 9, lines 49-53) which are controlled between on and off state by a common threshold signal by subtracting the potential of the segment signal from the potential of the common signal (see figures 14K and 14L, column 14, lines 43-50).

Yokota fails to teach wherein said border comprises a width of two pixels. As modified by Grupp reference, Grupp teaches the deficiencies of Yokota in which a LCD device comprises "the second display zone 8 is shaped like a frame the external edge of which is designated by the dashed line 19 and the inner edge of which is designated by the dashed line 17. This frame here has a width of one pixel, but can of course be wider depending on the dimensions of the whole display surface and the contrast effect wanted" page 6, lines 5-10, which imply to select the width of two pixels extending around their perimeter.

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5. As to **claim 13**, Yokota teaches a display unit 1 comprising a passive matrix of pixels n rows and m columns of discrete pixels, a common driver 16, a segment driver 14, a display data memory 7 (figure 1), the drive duty (duty ratio) selection register 34 controlling producing a display on the central 2 rows on the screen, the shifting operation is started from F/F9 and is ended at F/F24; the flip flops F/F1 to F/F9 and F/F25 to F/F32 are reset at all times, and are not shifted (see figure 9, column 9, lines 49-53) which are controlled between on and off state by a common threshold signal by subtracting the potential of the segment signal from the potential of the common signal; and a contrast adjustment circuit 39, see figures 14A, 14K and 14L, col. 13, line 64 to col. 14, line 12; and col. 14, lines 43-50.

Yokota fails to teach wherein said border comprises a width of two pixels. As modified by Grupp reference, Grupp teaches the deficiencies of Yokota in which a LCD device comprises "the second display zone 8 is shaped like a frame the external edge of which is designated by the dashed line 19 and the inner edge of which is designated by the dashed line 17. This frame here has a width of one pixel, but can of course be wider depending on the dimensions of the whole display surface and the contrast effect wanted" page 6, lines 5-10, which imply to select the width of two pixels extending around their perimeter.

6. As to **claim 19**, Yokota teaches a portable electronic device (figure 18) comprising a processor 3, a memory unit 7 (figure 1), a user input device (figure 15), a display unit 1, a passive matrix of pixels n rows and m columns of discrete pixels, a common driver 16, a segment driver 14, a display data memory 7 (figure 1), the drive

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duty (duty ratio) selection register 34 controlling producing a display on the central 2 rows on the screen, the shifting operation is started from F/F9 and is ended at F/F24; the flip flops F/F1 to F/F9 and F/F25 to F/F32 are reset at all times, and are not shifted (see figure 9, column 9, lines 49-53) which are controlled between on and off state by a common threshold signal by subtracting the potential of the segment signal from the potential of the common signal (see figures 14K and 14L, column 14, lines 43-50).

Yokota fails to teach wherein said border comprises a width of two pixels. As modified by Grupp reference, Grupp teaches the deficiencies of Yokota in which a LCD device comprises "the second display zone 8 is shaped like a frame the external edge of which is designated by the dashed line 19 and the inner edge of which is designated by the dashed line 17. This frame here has a width of one pixel, but can of course be wider depending on the dimensions of the whole display surface and the contrast effect wanted" page 6, lines 5-10, which imply to select the width of two pixels extending around their perimeter.

As to claims 2 and 20, Yokota teaches a contrast adjust circuit 39 (figure 14A, col. 13, line 64 to col. 14, line 12).

As to claims 3, 14 and 21, Yokota teaches the drive duty (duty ratio) selection register 34 controlling producing a display on the central 2 rows on the screen, the shifting operation is started from F/F9 and is ended at F/F24; the flip flops F/F1 to F/F9 and F/F25 to F/F32 are reset at all times, and are not shifted (see figure 9, column 9, lines 49-53) which are controlled on state be white to match the background (see figures 14K and 14L, column 14, lines 43-50).

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As to claims 4, 5, 15 and 22, Yokota teaches a passive matrix is negative mode liquid crystal display 1 technology (column 16, line 9).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Yokota to have the width of two pixels as taught by Grupp, because this would improve a good contrast ratio to be obtained between the selected pixels and the unselected pixels, and therefore a display of good quality, page 1, lines 18-21 of Grupp.

7. Claims 6, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yokota in view of Grupp, and further in view of Morimoto (US 6,535,188).

As to claim 6, Yokota and Grupp teach all of the claimed limitation of claim 1, except for "the passive matrix is electronic ink technology. As modified by Morimoto reference, Morimoto teaches the deficiencies of Yokota and Grupp in which a liquid crystal display device includes electronic ink 12 (figure 2, column 5, lines 19-20). As to claims 9 and 10, Morimoto teaches each pixel including red, green, blue subpixel sharing a common row and spanning three columns (see figure 1). It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Yokota and Grupp to have the electric ink technology taught by Morimoto, because this would reduce the thickness fluctuation of liquid crystal layer and avoid an occurrence of a portion of a display image deterioration such as a deviation of contrast ratio (column 3, lines 25-28 of Morimoto).

8. Claims 12, 18 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yokota in view of Grupp, and further in view of Flack et al (US 6,288,704, hereinafter Flack).

Yokota and Grupp teach all of the claimed limitation of claims 1, 13 and 19, except for "said passive matrix comprises 160 rows and 160 columns of discrete pixels." As modified by Flack reference, Flack conventionally discloses a PDA 20 in which the display area 28 contains an array of 160 pixels by 160 pixels (see figure 2, column 2, lines 20-29). It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Yokota and Grupp to have the display area 28 containing an array of 160 pixels by 160 pixels as conventionally disclosed by Flack, because this would allow a user to navigate such an object in an easy and intuitive way, a user can navigate from one slice of the image to the next easily using only one hand (see column 8, lines 55-59 of Flack).

9. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yokota in view of Grupp, and further in view of Colgan et al (US 6,323,834, hereinafter Colgan).

Yokota and Grupp teach all of the claimed limitation of claim 1, except for the passive matrix is microelectromechanical system technology. As modified by Colgan reference, Colgan teaches the deficiencies of Yokota and Grupp in which the display device comprises the passive matrix display 154, and deformable mirrors 133 (fig. 22, col. 12, lines 23-26). It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Yokota and Grupp to have the passive matrix display 154, deformable mirrors 133 taught by Colgan, because this would provide high

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reflectivity and good contrast ration while reducing manufacturing costs (column 7, lines 52 and line 63 of Colgan).

10. Claims 8, 16 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yokota in view of Grupp, and further in view of Lin et al (US 6,064,359, hereinafter Lin).

Yokota and Grupp teaches all of the claimed limitation of claims 1, 13 and 19, except for a driver circuit 18 responsive to a single control signal for generating said common threshold signal. As modified by Lin reference, Lin teaches the deficiencies of Yokota and Grupp in which a display device comprises a pixel out generator 56 (a driver circuit), a signal control signal ($D_{i,j}$), a common threshold signal P_{out} (see figures 2A and 2B). It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Yokota and Grupp to have the threshold unit 58, a comparator 54, and pixel out generator 56 taught by Lin, because this would improve system for frame rate modulating an LCD device to reduce flicker and visual artifacts (column 2, lines 35-37 of Lin).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M. Nguyen whose telephone number is 571-272-7697. The examiner can normally be reached on MON-THU from 9:00-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard A. Hjerpe can be reached on 571-272-7691. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kevin M. Nguyen/
KEVIN M. NGUYEN
Examiner
Art Unit 2629

KMN
September 4, 2007